

NOTES ON FISHES FROM ARKANSAS, INDIAN TERRITORY AND TEXAS.

BY HENRY W. FOWLER.

Dr. Henry A. Pilsbry, while in the above-named localities during April of 1903, formed a small collection of fishes now in the Academy of Natural Sciences of Philadelphia.

The more precise localities are:

1. *Arkansas:*

Rogers, White river basin.

Hartford, Arkansas river basin.

2. *Indian Territory:*

Wister, Arkansas river basin.

Limestone Gap, Red river basin.

3. *Texas:*

Hondo, Neuces river basin.

Del Rio, Rio Grande basin.

Devil's river, Rio Grande basin.

One form appears to be new, and the color-notes of others are especially interesting on account of the season.

SILURIDÆ.

Ictalurus punctatus (Rafinesque).

Del Rio, Texas.

Ameiurus nebulosus (Le Sueur).

Hondo, Texas.

CATOSTOMIDÆ.

Carpiodes grayi Cope.

Proc. Amer. Philos. Soc., XI, 1870, p. 482. Probably one of the Western States.

Head $4\frac{1}{3}$; depth $3\frac{1}{4}$; D. III, 23; A. II, 7; P. I, 17; V. I, 10; scales 35 in lateral line to base of caudal; 7 scales obliquely from origin of dorsal to lateral line, and 6 from latter to origin of ventral; 17 scales before dorsal; width of head $1\frac{1}{2}$ in its length; depth of head $1\frac{1}{4}$; snout 3; eye $5\frac{1}{6}$; width of mouth $5\frac{2}{3}$; interorbital space $2\frac{2}{3}$; first developed dorsal ray $1\frac{1}{3}$; anal ray $1\frac{1}{2}$; pectoral $1\frac{1}{3}$; ventral $1\frac{1}{3}$; least depth of

caudal peduncle $1\frac{1}{2}$. Opercle with radiating parallel striæ. Gill-rakers fine, slender, numerous, shorter than filaments. Color when fresh in alcohol dull olivaceous-brown on upper surface, pale on sides, and dilute or whitish on lower surface. Everywhere with more or less dull brassy reflections. Longitudinal lines following courses of scales pale. Opercle bright brassy. Fins dilute olive-yellow, unpaired darker and slightly dusky marginally. Cheek silvery. Iris dull golden, dusky above. Peritoneum black. Length $12\frac{1}{4}$ inches. Del Rio, Texas.

Also three others with same data showing following:—Head $4\frac{1}{2}$ to $4\frac{1}{4}$; depth $2\frac{5}{8}$ to $3\frac{1}{8}$; D. III, 22 to 25; scales to base of caudal 35 to 36; total length $7\frac{7}{8}$ to $8\frac{5}{8}$ inches.

These all appear to me to agree best with Cope's description. He gives the orbit as 4 in head, but this is probably due to a different method of measuring. If the figure of *Ictiobus tumidus*¹ is correct it may represent a distinct form. The pectoral is said to almost reach the ventral, and the radii are more numerous. Girard's figure of *Carpiodes damalis*² shows a smooth opercle, large subopercle, and the ventral inserted well posterior to the tip of pectoral. In my examples of *C. grayi* the first developed dorsal ray extends back about $\frac{3}{5}$ of the entire length of the depressed fin.

Catostomus nigricans (Le Sueur).

Color when fresh in alcohol dull olive, inclining to whitish below, and everywhere with more or less silvery reflections. Back with five rather indistinctly defined large saddle-like blotches composed of dusky points. Lower surface of head silvery. Dusky dots on side of snout, maxillary and upper opercle. Dorsal and caudal dull scarlet, margins more or less dusky, especially that of former. Anal, pectoral and ventral whitish. Hartford, Arkansas.

Minytrema melanops (Rafinesque).

Del Rio, Texas.

Moxostoma congestum (Baird and Girard).

Head $4\frac{1}{2}$; depth $4\frac{1}{3}$; D. II, 11; A. II, 7; P. I, 17; V. I, 9; scales 44 in lateral line to base of caudal, and 2 or 3 more on latter; 7 scales obliquely from origin of dorsal to lateral line, and 5 between latter and origin of ventral; 16 scales before dorsal; width of head $1\frac{3}{4}$ in its length; depth of head $1\frac{2}{5}$; snout $2\frac{1}{10}$; eye $5\frac{4}{5}$; width of mouth $3\frac{7}{8}$; interorbital space $2\frac{1}{5}$; first developed dorsal ray $1\frac{1}{3}$; base of dorsal $1\frac{4}{5}$;

¹ *U. S. Mex. Bound. Surv., Ichth.*, 1859, p. 34, Pl. 19, figs. 1-4.

² *Ex. Doc. No. 78, Rep. Expl. Surv. R. R. Miss. Pac.*, X. Fish., 1858, p. 218, Pl. 48, figs. 1-4.

third developed anal ray $1\frac{1}{10}$; base of anal $2\frac{4}{5}$; caudal 1; least depth of caudal peduncle $2\frac{2}{3}$; pectoral $1\frac{1}{20}$; ventral $1\frac{1}{3}$. Color when fresh in alcohol dull or pale brown. Lower surface dull milky-white. Back with more or less silvery reflections, and slightly darker even longitudinal lines follow courses of scales. Dorsal and caudal dilute dusky-olive. Anal, pectoral and ventral pale salmon. Iris pale yellowish with grayish. Peritoneum silvery. Length $11\frac{1}{8}$ inches. Del Rio, Texas.

CYPRINIDÆ.

Campostoma anomalum (Rafinesque).

Adult male when fresh in alcohol dark brown above, and on upper side, lower side and under surface of body and fins white. Lower side of trunk posterior to dorsal brick-red with sporadic clusters of pale dusky above. Dorsal and caudal dilute dull olive-dusky, former with a black transverse streak across its middle adjoining a brick-red streak below. Caudal a little dusky medianly at base. Anal slightly ruddy with a deep brown transverse streak adjoining a brick-red one above. Pectoral grayish above at its base. Ventral with more or less ruddy. Other examples are tinged with dull chrome-yellow, and streaks on fins absent. Rogers and Hartford, Arkansas.

Chrosomus erythrogaster (Rafinesque).

Rogers, Arkansas. Most examples with bright red bellies.

Fimephales notatus (Rafinesque).

Color when fresh in alcohol dull olivaceous, becoming pale on side and whitish below. Body with more or less silvery reflections. A narrow well-defined dusky or blackish band about equal to pupil in width extends from eye to base of caudal, where it forms a spot, and also distinct on upper opercle. Scales on back all with more or less olive-dusky dots and well-defined edges. A small pale dusky spot on front of dorsal. Dorsal, caudal and pectoral dull grayish, tinged with dilute red. Anal and ventral pale, slightly tinged with red. Iris grayish. Hartford, Arkansas. Limestone Gap, Indian Territory.

Notropis blennioides (Girard).

Color when fresh in alcohol pale olive-buff, whitish below, and everywhere more or less silvery. Scales on back without distinct dark edges. An indistinctly defined and rather broad lateral band of gray from head to base of caudal, and anteriorly including a number of dusky or dark-brown dots. Fins pale or dilute brownish, lower ones whitish. Del Rio, Texas.

Notropis shumardi (Girard).

Color when fresh in alcohol pale olive-green, whitish below, and scales above lateral line with slightly darker edges. Body more or less washed with silvery. Dorsal and pectoral dilute reddish with dusky edges above. Caudal pale dusky-gray. Ventral and anal whitish. Snout dusky-brown. Side with a rather broad indistinctly defined silver-gray band from head to caudal, and scales in lateral line after dorsal with blackish dots becoming most distinct on caudal peduncle. No spot at base of caudal. Blackish spots extending from posterior rim of eye backward, but soon becoming indistinct above pectoral. Iris grayish. Limestone Gap, Indian Territory.

Notropis lutrensis (Baird and Girard).

Dark nuchal band conspicuous. Small tubercles on upper surface of head and along lower side of body above anal very numerous. Devil's river and Del Rio, Texas.

Notropis proserpina (Girard).

Dusky dots at base of dorsal. Caudal bright yellow. Del Rio, Texas.

PARANOTROPIS subg. nov.

Type *Photogenis luciodus* Cope

The species of this group closely resemble those of the subgenus *Notropis* Rafinesque, which is typified by *atherinoides*. They differ chiefly in the fewer developed anal rays, mostly 7 to 9. They are also distinguished from the *Luxilus* and *Hydrophlox* groups by the absence of grinding surfaces on the teeth and the broad scales which are not narrowly imbricated. From *Orcella*, with which they agree in these respects, they differ in the top of the head which is not especially elevated, so that the eye is nearer the upper than the lower profile. *Episema* Jordan, based on *scabriceps*, is preoccupied.

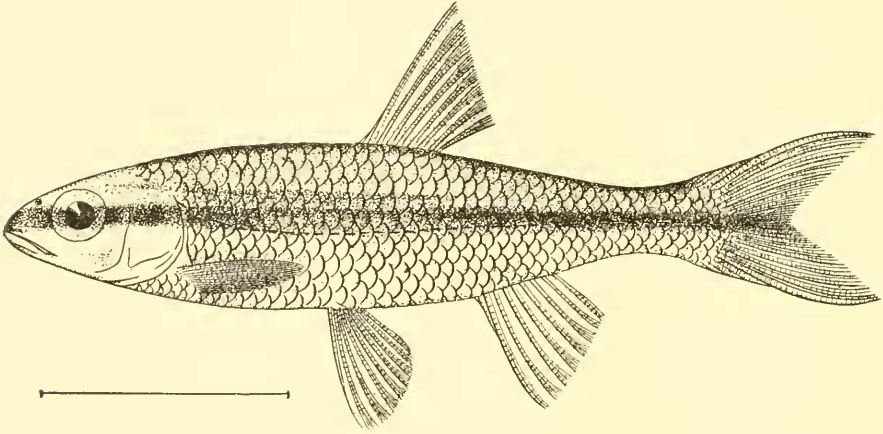
(*Παρά*, near; *ὀπίσθεν*, back, and *τροπή*, keel, hence *Notropis*.)

Notropis pilsbryi sp. nov.

Head 4; depth $4\frac{1}{4}$; D. II, 8; A. II, 8; P. I, 15; V. I, 8; scales 40 in lateral line to base of caudal, and 3 more on latter; 15 scales before dorsal; 5 scales between origin of dorsal and lateral line; 4 scales between latter and origin of ventral; width of head $1\frac{9}{10}$ in its length; depth of head $1\frac{1}{4}$; snout $3\frac{1}{6}$; eye $3\frac{1}{6}$; maxillary 3; interorbital space $3\frac{1}{6}$; length of depressed dorsal 1; depressed anal $1\frac{1}{4}$; pectoral $1\frac{1}{3}$; ventral $1\frac{3}{7}$; caudal 1; least depth of caudal peduncle $2\frac{2}{3}$.

Body elongate, compressed, rather slender, more or less fusiform,

and greatest depth at origin of dorsal. Caudal peduncle long, compressed, and its least depth $2\frac{2}{3}$ in its length, measured from base of last anal ray.



Head elongate, compressed, and upper profile more or less straight from above nostrils. Snout convex, rather broad, and also with a convex profile. Eye rather large, a little above middle of depth of head, and well anterior in its length. Mouth slightly curved, inclined, and jaws subequal, lower hardly if any projecting. Maxillary reaching about opposite front rim of orbit. Mandible rather broad, and rami but little elevated, edges of jaws rounded. Tongue rather broad, fleshy, and adnate to floor of mouth. Lips thin and narrow. Nostrils adjoining near upper edge of eye, and internasal space much less than interorbital. Anterior nostril circular, and posterior larger, concealed in front by flap of anterior. Both interorbital and internasal spaces a little elevated, though flattened medianly. Subopercle of moderate size.

Gill-opening extending forward below posterior rim of orbit. Rakers small, weak, and very short. Filaments about $\frac{3}{5}$ of orbit. Pseudo-branchiæ well developed. Pharyngeal teeth 2, 4-4, 2, compressed, and hooked. Isthmus rather broad.

Scales cycloid, moderately large, and exposed portions but little deeper than broad. Except base of caudal, fins and head naked. Lateral line slightly decurved at first, running rather low and straight to base of caudal. Tubes simple.

Dorsal inserted about midway between tip of snout and base of caudal, second rudimentary ray rather long closely joined with first

articulated which is longest. Anal inserted behind base of dorsal, first articulated ray longest. Caudal forked, lobes pointed. Pectoral broad, falling a little short of ventral. Ventral inserted before origin of dorsal and reaching anus which is close in front of anal.

Color when fresh in alcohol dull olive-brown above, below dull white, and side with a broad diffuse grayish band. A band a little wider than pupil composed of dusky dots extends from snout through eye, along side to middle of base of caudal, where it is intensified. It is also continued out to margin of caudal, as median rays are grayish-dusky. Top of head brownish, and a median brownish-dusky streak on back enclosing dorsal fin and continued to caudal. Body everywhere with more or less silvery. Fins red, deepest basally. Dorsal, caudal and pectoral with dilute olivaceous-gray on outer portions. Mandible reddish. Iris silvery, except horizontal median dark cross-bar. Peritoneum dusky-gray

Length $3\frac{1}{2}$ inches.

Type No. 24,514, A. N. S. P. Rogers, White river basin, Arkansas. Collection Dr. H. A. Pilsbry. Also six co-types with same data. After being in alcohol some time the colors have faded. The longitudinal dusky band is, however, still present.

This species is very closely related to *Notropis luciodus* (Cope), differing apparently in coloration and slightly more slender body.

(Named for my friend Dr. Henry A. Pilsbry, well known among leading conchologists.)

Subgenus NOTROPIS Rafinesque.

Notropis socius (Girard).

Del Rio, Texas.

Notropis notemigonoides Evermann.

Hartford, Arkansas.

Phenacobius scopifer (Cope).

Color when fresh in alcohol olivaceous above, whitish below. Scales on back edged with dusky-olive. Lower surface with silvery reflections. Side of head somewhat brassy with pale dusky dots. A broad dusky-slate bar extends from eye to middle of base of caudal, dividing upper and lower colors of body. Top of head dark brownish-olive with a median streak extending to dorsal and continued behind it to caudal. A black spot at base of caudal. Fins and lower surface of head with dilute red, dorsal, caudal and pectoral deepest. Limestone Gap, Indian Territory.

CHARACINIDÆ.

Tetragonopterus argentatus (Baird and Girard).

Color when fresh in alcohol pale olive on upper surface, sides and lower surface silvery-white. Upper boundary of silvery-white of sides shows a pale diffuse leaden band, becoming distinct and dark along middle of side of caudal peduncle to base of caudal. It is also continued on caudal as several of median rays are same color. Dorsal and caudal dilute pale olivaceous, latter with a pale ruddy wash. Anal with marginal portion slightly dusky and basally with a pale ruddy tinge. Pectoral and ventral also with a dilute ruddy tinge. A dull slaty blotch behind opercle above. Iris pale yellowish. Del Rio and Devil's river, Texas.

PÆCILIIDÆ.

Zygonectes notatus (Rafinesque).

Hartford, Arkansas. Wister, Indian Territory.

Gambusia affinis (Baird and Girard).

Devil's river, Texas.

ATHERINIDÆ.

Labidesthes sicculus (Cope).

Hartford, Arkansas.

CENTRARCHIDÆ.

Apomotis cyanellus (Rafinesque).

Hartford, Arkansas. Devil's river, Texas.

Lepomis megalotis (Rafinesque).

Hartford, Arkansas. Devil's river and Del Rio, Texas.

PERCIDÆ.

Etheostoma whipplii (Girard).

Color when fresh in alcohol olivaceous-brown, paler or whitish below. Back and side with marblings or mottlings of deep olivaceous-brown, though on latter about 13 diffuse spots are formed along course of lateral line. Posteriorly, and on caudal peduncle, they become vertically elongate. An enlarged black humeral scale. Head dusky above, and a blackish streak from eye to upper corner of gill-opening. A dusky streak from below eye. Fins mostly orange-red with more or less dusky basally. Spinous dorsal with a median longitudinal orange-red band edged above and below with whitish. A bright orange-red bar on caudal next to rather dusky margin. Pectoral and ventral grayish, latter dark. Limestone Gap, Indian Territory.

Considerable variation is noticed. Some examples have few brown mottlings on side, others have them very distinct and wavy. All are more or less orange-red on fins and show greater portion of caudal dusky.

An example from Hartford, Arkansas, according to Dr. Pilsbry's notes, had the fins vividly colored in life. The spinous dorsal and ventrals were with green spines and rays, the rayed dorsal and caudal with a scarlet border, and the anal scarlet with a green edge.

CICHLIDÆ.

Heros cyanoguttatus (Baird and Girard).

Del Rio and Devil's river, Texas.